

REMARKS/ARGUMENTS

Claims 1-5, 7-14, and 16-22 were previously pending in this application. Claims 23 and 24 are new to this application. Claims 1, 13, and 23 are the pending independent claims.

Rejections Under 35 U.S.C. § 102(b)

Claims 13-14 and 16-22 are rejected as anticipated by U.S. Publication No. 2001/0026943 to Dickopf et al.

The Dickopf et al. Reference Does Not Describe a Chamber Defined By a Circumferentially Closed Side Wall

The Dickopf et al. reference does not describe the claimed invention. Instead, the Dickopf et al. reference describes the problematic state of the art prior to the claimed invention, as described in greater detail herein. The apparatus described by Dickopf et al. uses an "index matching" film provided by a capillary gap between the prism and the sensor plate. This structure is error prone (i.e., generation of problematic bubbles between the surfaces). In contrast, the claimed invention does not rely on a capillary effect for supplying the index fluid. The claimed invention with a chamber having an inlet and outlet for the index fluid provides the significant advantage of the index oil filling without bubbles, as described in paragraphs [0018]-[0019] of the U.S. publication of the pending application. Dickopf et al. is not directed to the optical coupling of two optical elements as claimed herein.

One embodiment of Dickopf et al.'s apparatus is shown below:

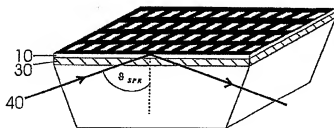
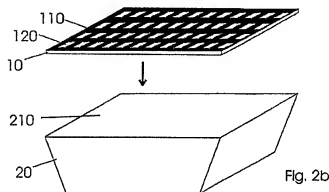


Fig. 2c

Fig. 2

The prism (the unlabeled bottom portion of the figure) is provided with a sample carrying sensor unit 10 (e.g., glass plate) with an index fluid 30 therebetween. The sample carrying sensor unit 10 includes sensor fields 120 and separating means 110 (e.g., film) as shown in Fig. 2b of Dickopf et al. below.



Dickopf et al. further states that "[r]equired between the prism and the sensor plate is an optical mediator (preferably an index fluid) to render the sensor plate accessible to light.. Filling is preferably done by capillary action in producing a capillary gap with suitable spacers between sensor plate and prism." (Dickopf et al. at pg. 5, [0064].) This capillary gap is precisely the problem avoided by the claimed invention as is described in the pending application. (See, e.g., paragraph [0018] of the U.S. publication of the pending application.)

Pending independent claim 13 recites: "forming a chamber delimited by the first and second radiation penetration surfaces and by a **circumferentially closed side wall** which connects the first and second radiation penetration surfaces, said **circumferentially closed side wall** defining a first section in the first radiation penetration surface and a second section in the second radiation penetration surface, the surface area of the first section being smaller than the surface area of the first radiation penetration surface, and the surface area of the second section being smaller than the surface area of the second radiation penetration surface...." (emphasis added.)

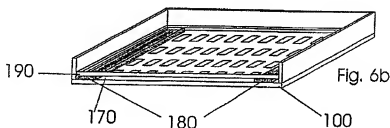
As can be seen in Figure 2 above, the Dickopf et al. apparatus does not include at least the following:

- a circumferentially closed side wall which connects first and second radiation

penetration surfaces;

- a circumferentially closed side wall defining a first section in the first radiation penetration surface (e.g., prism) and a second section in the second radiation penetration surface (e.g., sample carrying sensor unit 10);
- a first section with a surface area that is smaller than the surface area of the first radiation penetration surface; and
- a second section with a surface area that is smaller than the surface area of the second radiation penetration surface.

Although not applied by the Examiner in the Office Action, Applicants note that Dickopf et al.'s embodiment in Figure 6 does not cure the deficiencies of the rejection. Figure 6b shows spacers 180 on sensor plate 100. A glass plate 190 is located on the spacers to provide a capillary gap 170 between the sensor plate 100 and glass plate 190.



This embodiment does not show a prism. Importantly, Figure 6b fails to show a chamber delimited by a first and second radiation penetration surface and by a circumferentially closed side wall as recited in the pending claims.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-5 and 7-12 are rejected as obvious over Dickopf et al. in view of U.S. Patent No. 6,870,627 to Elkind et al.

Even If Combined, Dickopf et al. and Elkind et al. Do Not Add Up to the Claimed Invention

Elkind et al. does not cure the deficiencies of Dickopf et al. as described in detail above. Specifically, Elkind et al. does not teach or suggest a circumferentially closed side wall which

connects the first and second radiation penetration surfaces. Accordingly, a combination of Dickopf et al. and Elkind et al. does not provide the claimed invention.

Furthermore, the Examiner acknowledges that Dickopf et al. does not disclose a feeding and/or discharge conduit. (Office Action at pg. 4.) Accordingly, the Examiner cites Elkind et al. to fill this gap. However, Elkind et al. is directed to entry and egress of analyte containing fluid (i.e., the sample to be tested). Independent claim 1 recites feeding and discharge conduits for index-adapting liquid or gas. The index-adapting liquid is not the analyte containing fluid but is the liquid which is put into the chamber and which adapts the index between the first optical element and the second optical element. (Publication of the pending application at page 2, paragraph [0034].)

To further demonstrate the difference between "index adapting liquid" and "analyte containing fluid," Applicants point to pending dependent claim 12 recites "a device for supplying and discharging sample liquid," where the "sample liquid" as claimed is more akin to Elkind et al.'s "analyte containing fluid." The claimed invention deals with the simultaneous handling of two fluid streams—(1) index fluid and (2) sample solution (e.g., buffer solution or protein solution)—while Elkind et al. deals exclusively with handling sample solutions.

Furthermore, Elkind et al. and Dickopf et al. do not teach or suggest a feeding conduit and discharge conduit configured as channels in an optical element (claims 2 and 24).

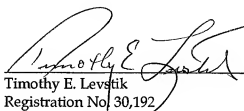
Application No. 10/555,818
Amendment
Responsive to Office Action dated October 28, 2009

Accordingly, Applicants respectfully submit that the pending claims are novel and non-obvious. The Commissioner is hereby authorized to charge any additional fees which may be required with respect to this communication, or credit any overpayment, to Deposit Account No. 06-1135.

Respectfully submitted,

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